

	Devices	Model Name	Exist in 1.5/2.5V	Exist in 1.5/3.3V/5V	SM Scal	Symbol	Pcell	L			W			nf			m			CDL	Terminal Pins	Parameters	
								min	max	default	min	max	default	min	max	default	min	max	default				
MOSFET	thin-gate 1.5V regular Vt NMOS	nmos_1p5	X	X	Y	Y	Y	0.13u	100u	0.13u	0.15u	100u	0.3u	1	100	1	1	100	1	1	1	D G S B	w, l, nf, as, ad, ps, pd, nrd, nrs, sa, sb, sd m
	thin-gate 1.5V native NMOS	nmos_1p5_nat	X	X	Y	Y	Y	0.3u	100u	0.3u	0.15u	100u	0.3u	1	100	1	1	100	1	1	1	D G S B	w, l, nf, as, ad, ps, pd, nrd, nrs, sa, sb, sd m
	thin-gate 1.5V regular Vt PMOS	pmos_1p5	X	X	Y	Y	Y	0.13u	100u	0.13u	0.15u	100u	0.3u	1	100	1	1	100	1	1	1	D G S B	w, l, nf, as, ad, ps, pd, nrd, nrs, sa, sb, sd m
	thin-gate 1.5V low Vt NMOS	nmos_1p5_lvt	X	X	Y	Y	Y	0.13u	100u	0.13u	0.15u	100u	0.3u	1	100	1	1	100	1	1	1	D G S B	w, l, nf, as, ad, ps, pd, nrd, nrs, sa, sb, sd m
	thin-gate 1.5V low Vt PMOS	pmos_1p5_lvt	X	X	Y	Y	Y	0.13u	100u	0.13u	0.15u	100u	0.3u	1	100	1	1	100	1	1	1	D G S B	w, l, nf, as, ad, ps, pd, nrd, nrs, sa, sb, sd m
	thick-gate 2.5V NMOS	nmos_2p5	X		Y	Y	Y	0.24u	100u	0.24u	0.15u	100u	0.3u	1	100	1	1	100	1	1	1	D G S B	w, l, nf, as, ad, ps, pd, nrd, nrs, sa, sb, sd m
	thick-gate 2.5V PMOS	pmos_2p5	X		Y	Y	Y	0.24u	100u	0.24u	0.15u	100u	0.3u	1	100	1	1	100	1	1	1	D G S B	w, l, nf, as, ad, ps, pd, nrd, nrs, sa, sb, sd m
	thick-gate 3.3V NMOS	nmos_3p3		X	Y	Y	Y	0.35u	100u	0.35u	0.15u	100u	0.3u	1	100	1	1	100	1	1	1	D G S B	w, l, nf, as, ad, ps, pd, nrd, nrs, sa, sb, sd m
	thick-gate 3.3V native NMOS	nmos_3p3_nat		X	Y	Y	Y	1.2u	100u	1.2u	0.6u	100u	0.6u	1	100	1	1	100	1	1	1	D G S B	w, l, nf, as, ad, ps, pd, nrd, nrs, m (refer to Comment A)
	thick-gate 3.3V PMOS	pmos_3p3		X	Y	Y	Y	0.3u	100u	0.3u	0.15u	100u	0.3u	1	100	1	1	100	1	1	1	D G S B	w, l, nf, as, ad, ps, pd, nrd, nrs, sa, sb, sd m
DIODE	RVt thin gate N+/Psub diode	np_1p5	X	X	Y	Y	Y	0.35u	100u	1u	0.35u	100u	1u	-	-	-	1	100	1	3	PLUS MINUS	area, pj, m	
	RVt thin gate P+/Nwell diode	pn_1p5	X	X	Y	Y	Y	0.35u	100u	1u	0.35u	100u	1u	-	-	-	1	100	1	3	PLUS MINUS	area, pj, m	
	Nwell/Psub diode	nwp	X	X	Y	Y	Y	1u	100u	1u	1u	100u	1u	-	-	-	1	100	1	3	PLUS MINUS	area, pj, m	
	low Vt thin gate N+/Psub diode	np_1p5_lvt	X	X	Y	Y	Y	0.35u	100u	1u	0.35u	100u	1u	-	-	-	1	100	1	3	PLUS MINUS	area, pj, m	
	low Vt thin gate P+/Nwell diode	pn_1p5_lvt	X	X	Y	Y	Y	0.35u	100u	1u	0.35u	100u	1u	-	-	-	1	100	1	3	PLUS MINUS	area, pj, m	
	2.5V thick gate N+/Psub diode	np_2p5	X		Y	Y	Y	0.35u	100u	1u	0.35u	100u	1u	-	-	-	1	100	1	3	PLUS MINUS	area, pj, m	
	2.5V thick gate P+/Nwell diode	pn_2p5	X		Y	Y	Y	0.35u	100u	1u	0.35u	100u	1u	-	-	-	1	100	1	3	PLUS MINUS	area, pj, m	
	3.3V thick gate N+/Psub diode	np_3p3		X	Y	Y	Y	0.35u	100u	1u	0.35u	100u	1u	-	-	-	1	100	1	3	PLUS MINUS	area, pj, m	
	3.3V thick gate P+/Nwell diode	pn_3p3		X	Y	Y	Y	0.35u	100u	1u	0.35u	100u	1u	-	-	-	1	100	1	3	PLUS MINUS	area, pj, m	
	native thin gate N+/Psub diode	np_1p5_nat	X	X	Y	Y	Y	0.35u	100u	1u	0.35u	100u	1u	-	-	-	1	100	1	3	PLUS MINUS	area, pj, m	
native thick gate N+/Psub diode	np_3p3_nat		X	Y	Y	Y	0.35u	100u	1u	0.35u	100u	1u	-	-	-	1	100	1	3	PLUS MINUS	area, pj, m		

	Devices	Model Name	Exist in 1.5/2.5V	Exist in 1.5/3.3V/5V	SM Scal	Symbol	Pcell	L			W			nf			m			CDL	Terminal Pins	Parameters
								min	max	default	min	max	default	min	max	default	min	max	default			
Resistors	unsalicyded N+ diffusion resistor	nplus_u	X	X	Y	Y	Y	0.43u	150u	2u	0.8u	50u	1u	-	-	-	1	100	1	4	PLUS MINUS SUB	l, w, r, m
	salicyded N+ diffusion resistor	nplus_s	X	X	Y	Y	Y	0.28u	150u	2u	0.42u	50u	1u	-	-	-	1	100	1	4	PLUS MINUS SUB	l, w, r, m
	unsalicyded N+ poly	npolyf_u	X	X	Y	Y	Y	0.81u	150u	2u	0.8u	50u	1u	-	-	-	1	100	1	4	PLUS MINUS SUB	l, w, r, m
	salicyded N+ poly	npolyf_s	X	X	Y	Y	Y	0.28u	150u	2u	0.8u	50u	1u	-	-	-	1	100	1	4	PLUS MINUS SUB	l, w, r, m
	unsalicyded P+ diffusion resistor	pplus_u	X	X	Y	Y	Y	0.7u	150u	2u	0.8u	50u	1u	-	-	-	1	100	1	4	PLUS MINUS SUB	l, w, r, m
	salicyded P+ diffusion resistor	pplus_s	X	X	Y	Y	Y	0.28u	150u	2u	0.42u	50u	1u	-	-	-	1	100	1	4	PLUS MINUS SUB	l, w, r, m
	unsalicyded P+ poly	ppolyf_u	X	X	Y	Y	Y	0.81u	150u	2u	0.8u	50u	1u	-	-	-	1	100	1	4	PLUS MINUS SUB	l, w, r, m
	unsalicyded P+ poly high resistance	ppolyf_u_1k	X	X	Y	Y	Y	2u	150u	2u	1u	50u	1u	-	-	-	1	100	1	4	PLUS MINUS SUB	l, w, r, m
	salicyded P+ poly	ppolyf_s	X	X	Y	Y	Y	0.28u	150u	2u	0.8u	50u	1u	-	-	-	1	100	1	4	PLUS MINUS SUB	l, w, r, m
	Nwell resistor	nwell	X	X	Y	Y	Y	0.76u	150u	4u	1.8u	50u	2u	-	-	-	1	100	1	4	PLUS MINUS SUB	l, w, r, m
	metal 1 resistor	rm1	X	X	Y	Y	Y	0.16u	100u	0.16u	0.16u	100u	0.16u	-	-	-	1	100	1	5	PLUS MINUS	l, w, m
	metal 2 resistor	rm2	X	X	Y	Y	Y	0.2u	100u	0.2u	0.2u	100u	0.2u	-	-	-	1	100	1	5	PLUS MINUS	l, w, m
	metal 3 resistor	rm3	X	X	Y	Y	Y	0.2u	100u	0.2u	0.2u	100u	0.2u	-	-	-	1	100	1	5	PLUS MINUS	l, w, m
	metal 4 resistor	rm4	X	X	Y	Y	Y	0.2u	100u	0.2u	0.2u	100u	0.2u	-	-	-	1	100	1	5	PLUS MINUS	l, w, m
	metal 5 resistor	rm5	X	X	Y	Y	Y	0.2u	100u	0.2u	0.2u	100u	0.2u	-	-	-	1	100	1	5	PLUS MINUS	l, w, m
	metal 6 resistor	rm6	X	X	Y	Y	Y	0.2u	100u	0.2u	0.2u	100u	0.2u	-	-	-	1	100	1	5	PLUS MINUS	l, w, m
	metal 7 resistor	rm7	X	X	Y	Y	Y	0.2u	100u	0.2u	0.2u	100u	0.2u	-	-	-	1	100	1	5	PLUS MINUS	l, w, m
	9kA thickness top metal resistor	tm9k	X	X	Y	Y	Y	0.44u	100u	0.44u	0.44u	100u	0.44u	-	-	-	1	100	1	5	PLUS MINUS	l, w, m
BJT	Thin gate vertical PNP	vpnp_10x10	X	X	N	Y	N	-	-	-	-	-	-	-	-	-	1	100	1	2	C B E	m
		vpnp_5x5	X	X	N	Y	N	-	-	-	-	-	-	-	-	-	1	100	1	2	C B E	m
		vpnp_2x2	X	X	N	Y	N	-	-	-	-	-	-	-	-	-	1	100	1	2	C B E	m
LDMOS	5V LDNMOS	nmos_5p0_asym		X	Y	Y	Y	0.6u	25u	0.6u	1u	40u	1u	1	2	1	1	100	1	6	D G S B	w, l, nf, as, ad, ps, pd, m
	5V LDPMOS	pmos_5p0_asym		X	Y	Y	Y	0.6u	25u	0.6u	1u	40u	1u	1	2	1	1	100	1	6	D G S B	w, l, nf, as, ad, ps, pd, m
	5V LDNMOS inside deep nwell	nmos_5p0_asym_iso		X	Y	Y	Y	0.6u	25u	0.6u	1u	40u	1u	1	2	1	1	100	1	6	D G S B	w, l, nf, as, ad, ps, pd, m
	Nwell/Psub junction (5V)	nwp_5p0_asym		X	Y	Y	Y	1.76u	100u	3u	1.76u	100u	3u	-	-	-	1	100	1	3	PLUS MINUS	area, pj, m
	N+/Pwell junction (5V)	np_5p0_asym		X	Y	Y	Y	0.35u	100u	1u	0.35u	100u	1u	-	-	-	1	100	1	3	PLUS MINUS	area, pj, m
	Pwell/DNWell junction (5V)	dnwpw_5p0_asym		X	Y	Y	Y	1.62u	1000u	1.62u	1.62u	1000u	1.62u	-	-	-	1	100	1	3	PLUS MINUS	area, pj, m
	P+/Nwell junction (5V)	pn_5p0_asym		X	Y	Y	Y	0.35u	100u	1u	0.35u	100u	1u	-	-	-	1	100	1	3	PLUS MINUS	area, pj, m
DNwell/Psub junction (5V)	dnwps_5p0_asym		X	Y	Y	Y	5.1u	1000u	5.1u	5.1u	1000u	5.1u	-	-	-	1	100	1	3	PLUS MINUS	area, pj, m	
								mim_length			mim_width											
hh MIM	Single-mask 1fF/sq.um MIM	mim_sm_bb	X	X	Y	Y	Y	3u	100u	3u	3u	100u	3u	-	-	-	1	100	1	13	TOP BOT	C, mim_length, mim_width, m
	Dual-mask 1fF/sq.um MIM	mim_dm_bb	X	X	Y	Y	Y	3u	100u	3u	3u	100u	3u	-	-	-	1	100	1	13	TOP BOT	C, mim_length, mim_width, m

	Devices	Model Name	Exist in 1.5/2.5V	Exist in 1.5/3.3V/5V	SM Scal	Symbol	Pcell	L			W			nf			m			CDL	Terminal Pins	Parameters
								min	max	default	min	max	default	min	max	default	min	max	default			
								LX			WX			nf			mx					
RF MOSFET	thin-gate 1.5V RF NFET	RNFET_1P5	X	X	Y	Y	Y	0.13u	1u	0.13u	1u	10u	1u	1	5	1	1	100	1	7	D G S B	wx, lx, nfx, mx, fnoicor
	thin-gate 1.5V RF PFET	RFPFET_1P5	X	X	Y	Y	Y	0.13u	1u	0.13u	1u	10u	1u	1	5	1	1	100	1	7	D G S B	wx, lx, nfx, mx, fnoicor
	thin-gate 1.5V RF NFET, DNW	RNFET_1P5, DNW	X	X	Y	Y	Y	0.13u	1u	0.13u	1u	10u	1u	1	5	1	1	100	1	8	D G S B DN SUB	wx, lx, nfx, mx, fnoicor, PW_LENGTH, PW_WIDTH
	thin-gate 1.5V low Vt RF NFET	RNFET_LVT_1P5	X	X	Y	Y	Y	0.13u	1u	0.13u	1u	10u	1u	1	5	1	1	100	1	7	D G S B	wx, lx, nfx, mx, fnoicor
	thin-gate 1.5V low Vt RF PFET	RFPFET_LVT_1P5	X	X	Y	Y	Y	0.13u	1u	0.13u	1u	10u	1u	1	5	1	1	100	1	7	D G S B	wx, lx, nfx, mx, fnoicor
	thick-gate 3.3V RF NFET	RNFET_3P3		X	Y	Y	Y	0.35u	1u	0.35u	1u	10u	1u	1	5	1	1	100	1	7	D G S B	wx, lx, nfx, mx, fnoicor
	thick-gate 3.3V RF PFET	RFPFET_3P3		X	Y	Y	Y	0.3u	1u	0.3u	1u	10u	1u	1	5	1	1	100	1	7	D G S B	wx, lx, nfx, mx, fnoicor
	thick-gate 3.3V RF NFET, DNW	RNFET_3P3, DNW		X	Y	Y	Y	0.35u	1u	0.35u	1u	10u	1u	1	5	1	1	100	1	8	D G S B DN SUB	wx, lx, nfx, mx, fnoicor, PW_LENGTH, PW_WIDTH
VARACTOR	MOSVAR_1P5V	NMOSVAR_1p5V_rf	X	X	Y	Y	Y	-	-	0.13u	-	-	4u	1	40	1	1	8	1	9	G SDB SX	Mcell, F, Lfinger, Wfinger
	MOSVAR_3P3V	NMOSVAR_3p3V_rf		X	Y	Y	Y	-	-	0.35u	-	-	8u	1	20	1	1	8	1	9	G SDB SX	Mcell, F, Lfinger, Wfinger
	pnvar_1p5	PNVAR_1p5V_rf	X	X	Y	Y	Y	-	-	0.35u	-	-	8u	1	40	1	1	4	1	10	PD NW SX	Mcell, F, Lfinger, Wfinger
	pnvar_3p3	PNVAR_3p3V_rf		X	Y	Y	Y	-	-	0.35u	-	-	8u	1	40	1	1	4	1	10	PD NW SX	Mcell, F, Lfinger, Wfinger

Devices	Model Name	Exist in 1.5/2.5V	Exist in 1.5/3.3V/5V	SM Scal	Symbol	Pcell	L			W			nf			m			CDL	Terminal Pins	Parameters
							min	max	default	min	max	default	min	max	default	min	max	default			
							Din			W			S			N					
Inductor 1	C75N1W6S2_30K	X	X	N	Y	N	-	-	75u	-	-	6u	-	-	2u	-	-	1	11	PLUS MINUS	din, w, s, n, lm
Inductor 2	C75N1P5W6S2_30K	X	X	N	Y	N	-	-	75u	-	-	6u	-	-	2u	-	-	1.5	11	PLUS MINUS	din, w, s, n, lm
Inductor 3	C75N2W6S2_30K	X	X	N	Y	N	-	-	75u	-	-	6u	-	-	2u	-	-	2	11	PLUS MINUS	din, w, s, n, lm
Inductor 4	C75N2P5W6S2_30K	X	X	N	Y	N	-	-	75u	-	-	6u	-	-	2u	-	-	2.5	11	PLUS MINUS	din, w, s, n, lm
Inductor 5	C75N3W6S2_30K	X	X	N	Y	N	-	-	75u	-	-	6u	-	-	2u	-	-	3	11	PLUS MINUS	din, w, s, n, lm
Inductor 6	C75N3P5W6S2_30K	X	X	N	Y	N	-	-	75u	-	-	6u	-	-	2u	-	-	3.5	11	PLUS MINUS	din, w, s, n, lm
Inductor 7	C75N4W6S2_30K	X	X	N	Y	N	-	-	75u	-	-	6u	-	-	2u	-	-	4	11	PLUS MINUS	din, w, s, n, lm
Inductor 8	C75N4P5W6S2_30K	X	X	N	Y	N	-	-	75u	-	-	6u	-	-	2u	-	-	4.5	11	PLUS MINUS	din, w, s, n, lm
Inductor 9	C75N5W6S2_30K	X	X	N	Y	N	-	-	75u	-	-	6u	-	-	2u	-	-	5	11	PLUS MINUS	din, w, s, n, lm
Inductor 10	C75N5P5W6S2_30K	X	X	N	Y	N	-	-	75u	-	-	6u	-	-	2u	-	-	5.5	11	PLUS MINUS	din, w, s, n, lm
Inductor 11	C75N6W6S2_30K	X	X	N	Y	N	-	-	75u	-	-	6u	-	-	2u	-	-	6	11	PLUS MINUS	din, w, s, n, lm
Inductor 12	C75N6P5W6S2_30K	X	X	N	Y	N	-	-	75u	-	-	6u	-	-	2u	-	-	6.5	11	PLUS MINUS	din, w, s, n, lm
Inductor 13	C75N7W6S2_30K	X	X	N	Y	N	-	-	75u	-	-	6u	-	-	2u	-	-	7	11	PLUS MINUS	din, w, s, n, lm
Inductor 14	C75N7P5W6S2_30K	X	X	N	Y	N	-	-	75u	-	-	6u	-	-	2u	-	-	7.5	11	PLUS MINUS	din, w, s, n, lm
Inductor 15	C112N1W12S1P8_30K	X	X	N	Y	N	-	-	112u	-	-	12u	-	-	1.8u	-	-	1	11	PLUS MINUS	din, w, s, n, lm
Inductor 16	C112N1P5W12S1P8_30K	X	X	N	Y	N	-	-	112u	-	-	12u	-	-	1.8u	-	-	1.5	11	PLUS MINUS	din, w, s, n, lm
Inductor 17	C112N2W12S1P8_30K	X	X	N	Y	N	-	-	112u	-	-	12u	-	-	1.8u	-	-	2	11	PLUS MINUS	din, w, s, n, lm
Inductor 18	C112N2P5W12S1P8_30K	X	X	N	Y	N	-	-	112u	-	-	12u	-	-	1.8u	-	-	2.5	11	PLUS MINUS	din, w, s, n, lm
Inductor 19	C112N3W12S1P8_30K	X	X	N	Y	N	-	-	112u	-	-	12u	-	-	1.8u	-	-	3	11	PLUS MINUS	din, w, s, n, lm
Inductor 20	C112N3P5W12S1P8_30K	X	X	N	Y	N	-	-	112u	-	-	12u	-	-	1.8u	-	-	3.5	11	PLUS MINUS	din, w, s, n, lm
Inductor 21	C112N4W12S1P8_30K	X	X	N	Y	N	-	-	112u	-	-	12u	-	-	1.8u	-	-	4	11	PLUS MINUS	din, w, s, n, lm
Inductor 22	C112N4P5W12S1P8_30K	X	X	N	Y	N	-	-	112u	-	-	12u	-	-	1.8u	-	-	4.5	11	PLUS MINUS	din, w, s, n, lm
Inductor 23	C112N5W12S1P8_30K	X	X	N	Y	N	-	-	112u	-	-	12u	-	-	1.8u	-	-	5	11	PLUS MINUS	din, w, s, n, lm
Inductor 24	C112N5P5W12S1P8_30K	X	X	N	Y	N	-	-	112u	-	-	12u	-	-	1.8u	-	-	5.5	11	PLUS MINUS	din, w, s, n, lm
Inductor 25	C112N6W12S1P8_30K	X	X	N	Y	N	-	-	112u	-	-	12u	-	-	1.8u	-	-	6	11	PLUS MINUS	din, w, s, n, lm
Inductor 26	C112N7W12S1P8_30K	X	X	N	Y	N	-	-	112u	-	-	12u	-	-	1.8u	-	-	7	11	PLUS MINUS	din, w, s, n, lm
							mim_length			mim_width											
MIM	MIM_1M	X	X	Y	Y	Y	3u	100u	3u	3u	100u	3u	-	-	-	1	100	1	12	TOP BOT SUB	C, mim_length, mim_width, lm, m
	MIM_2M	X	X	Y	Y	Y	3u	100u	3u	3u	100u	3u	-	-	-	1	100	1	12	TOP BOT SUB	C, mim_length, mim_width, lm, m

New devices

Comment A

For nmos\_3p3\_nat, there are no "sa, sb, sd" in the netlist as the model does not support these parameters.

**Sample CDL netlist for 0.13LP-RF**

No	Format	Comments
1	M0 D G S B MODEL_NAME l=? w=? nf=? as=? ad=? ps=? pd=? nrs=? nrd=? sa=? sb=? sd=? m=?	A
2	Q0 C B E MODEL_NAME m=?	
3	D0 PLUS MINUS MODEL_NAME A=? P=? M=?	
4	R0 PLUS MINUS \$SUB=SUB MODEL_NAME l=? w=? r=? m=?	
5	R0 PLUS MINUS MODEL_NAME l=? w=? m=?	
6	M0 D G S B MODEL_NAME l=? w=? nf=? as=? ad=? ps=? pd=? m=?	
7	X0 D G S B MODEL_NAME wx=? lx=? nfx=? mx=? fnoicor=?	
8	X0 D G S B DN SUB MODEL_NAME mx=? fw=? l=? fingers=? fnoicor=? PW_LENGTH=? PW_WIDTH=?	
9	X0 G SDB SX MODEL_NAME Lfinger=? Wfinger=? F=? Mcell=?	
10	X0 PD NW SX MODEL_NAME Lfinger=? Wfinger=? F=? Mcell=?	
11	L0 PLUS MINUS MODEL_NAME din=? w=? s=? n=? lm=?	
12	C0 TOP BOT \$SUB=SUB MODEL_NAME C=? mim_length=? mim_width=? lm=? m=?	
13	C0 TOP BOT R[39]CMODEL_NAME C=? mim_length=? mim_width=? m=?	

A For nmos\_3p3\_nat, there are no "sa, sb, sd" in the netlist as the model does not support these parameters.